## THE ROLE OF RESPONSIBILITY AND BEHAVIOR CHANGE ON SUPPORT FOR CLIMATE POLICIES

Dhwani Yagnaraman and George Loewenstein
Department of Social and Decision Sciences, Carnegie Mellon University

#### 01. SUMMARY

Solar geoengineering is a set of emerging technologies that could reduce the effects of global warming by reflecting a fraction of sunlight back into space. It has the potential to reduce the consequences of climate change (Burns et al., 2018), but cannot replace reducing emissions or carbon dioxide removal. Geoengineering is also untested technology that is likely to affect rainfall and local weather patterns. We investigate how the framing of geoengineering affects support for carbon taxes.

Telling people about a green energy nudge reduced support for carbon taxes because it offered a "quick fix" (Haagman et al., 2019), while educating people about geoengineering increased support for carbon taxes (Cherry et al., 2021; Cherry et al., 2023). In this research, we test the possibility of geoengineering crowding out support for carbon taxes by focusing on the low responsibility for citizens. We highlight that solar engineering will be administered by the government and does not require citizens to change their behavior, habits, or purchases. We do not see crowding out of support for carbon taxes in any of our framings.

### 02. METHODOLOGY

Participants either read a carbon tax policy...

- 1) By itself /
- 2) After a geoengineering policy /
- 3) After a geoengineering policy that emphasizes the low responsibility for citizens

For each policy, participants answer whether they would implement that policy.

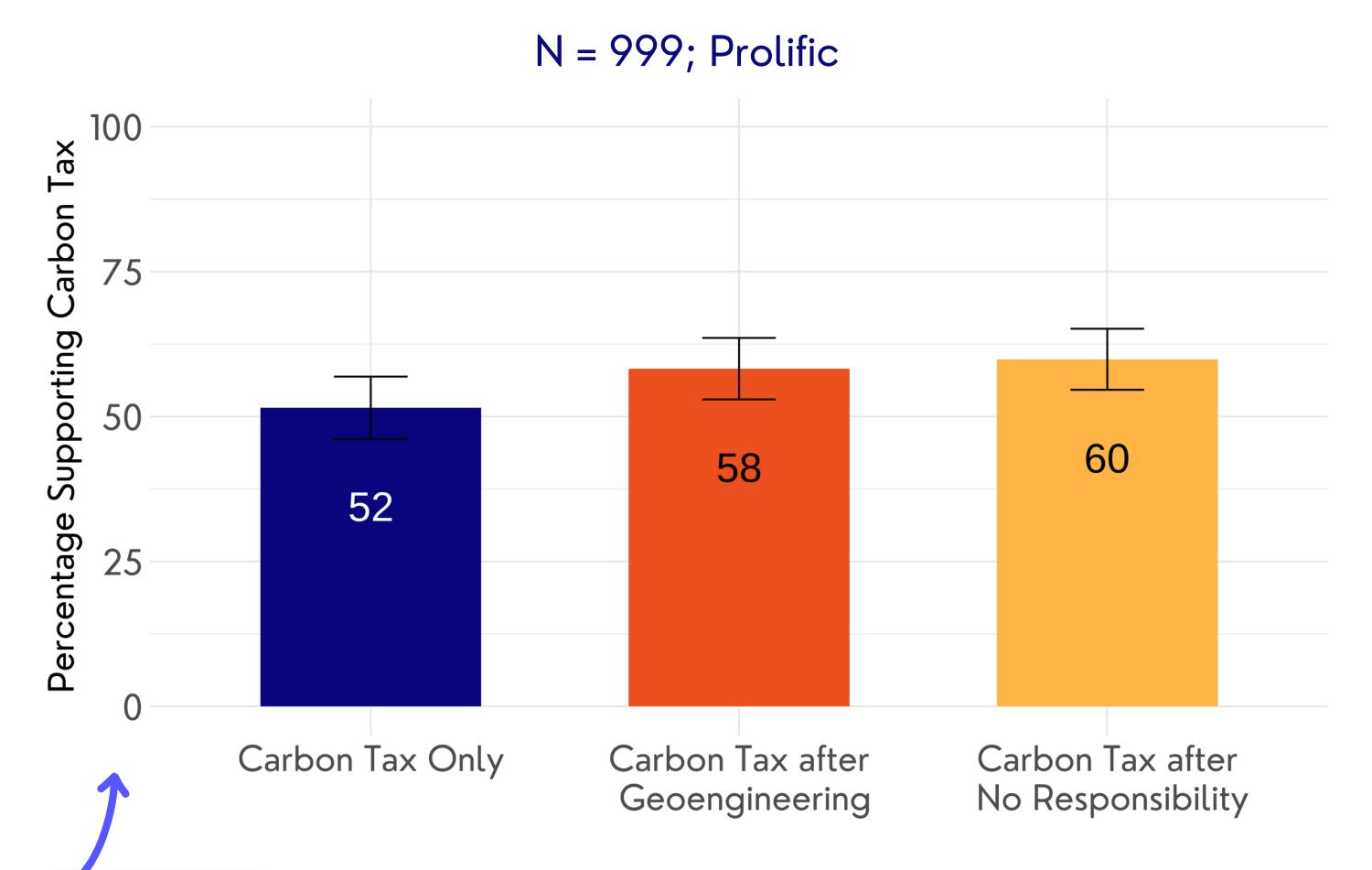
Another version of this study tested emphasizing the potential consequences (negative framing) and low responsibility (positive framing).

### 03. HYPOTHESES

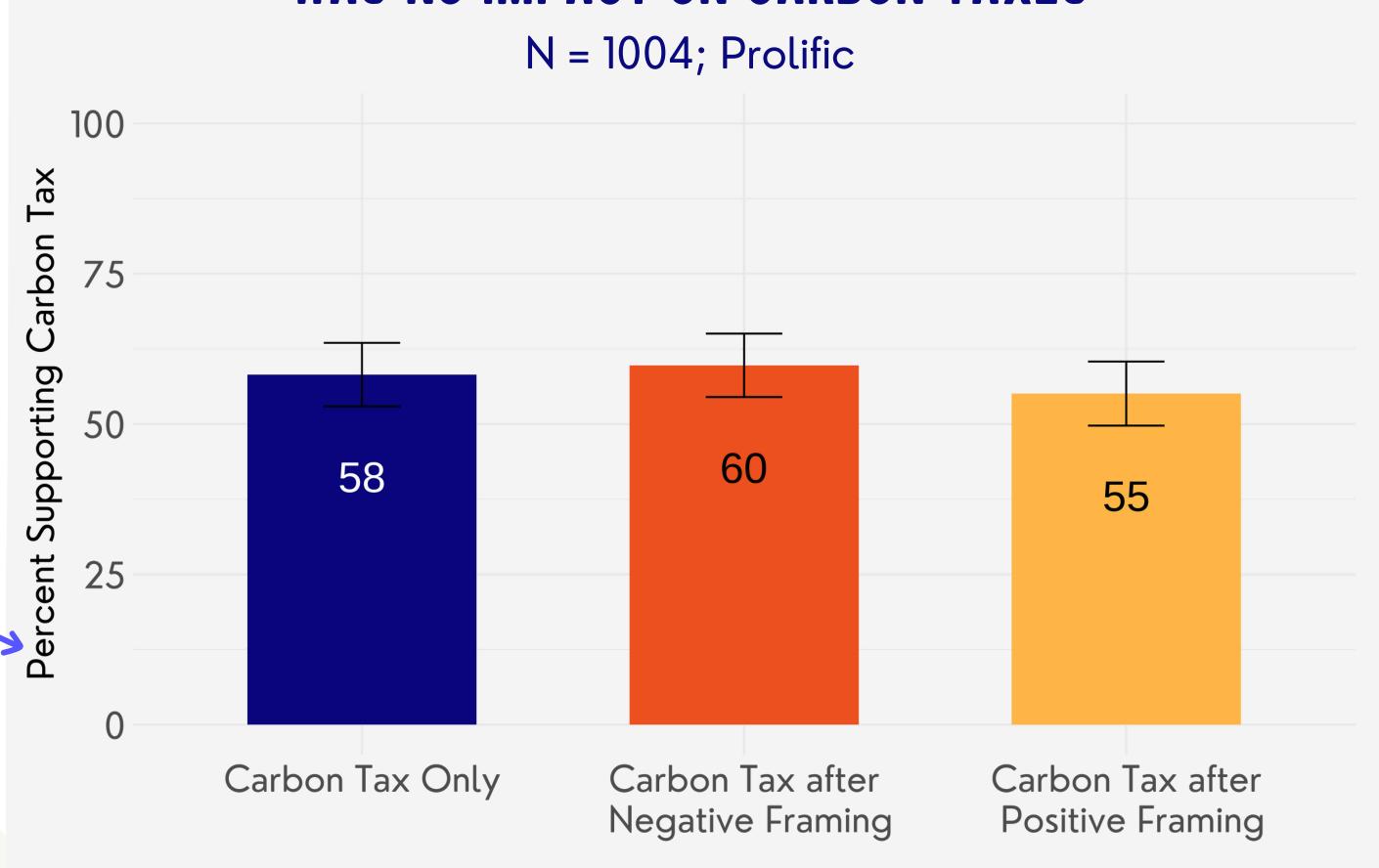
Presenting a carbon tax policy after geoengineering policies crowds in support for carbon taxes.

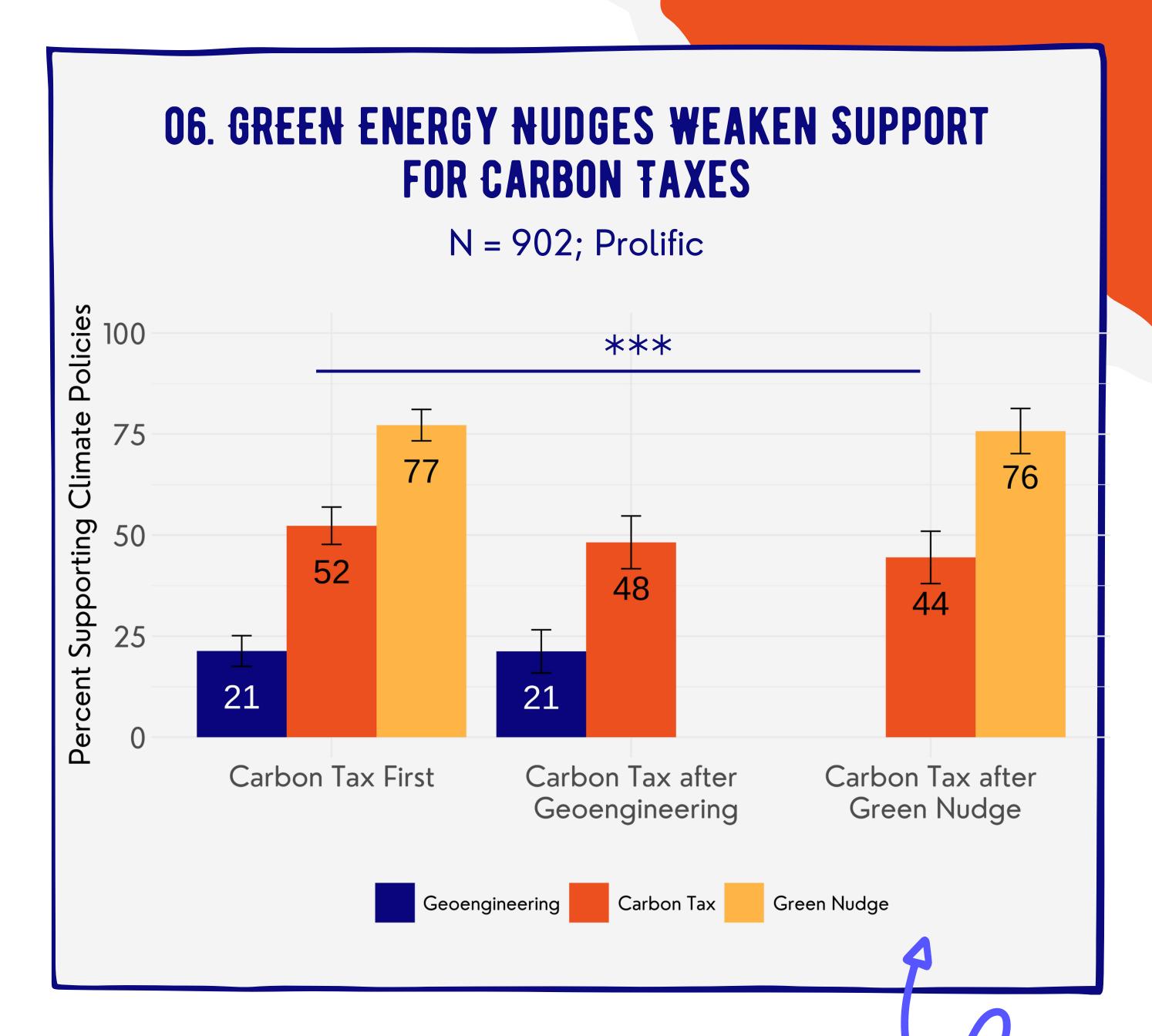
Highlighting the low responsibilty for citizens to change their behavior under geoengineering policies lowers support for carbon taxes.

# 04. LOW RESPONSIBILITY FOR CITIZENS IN GEOENGINEERING DOES NOT AFFECT SUPPORT FOR CARBON TAXES



# 05. VARYING THE FRAMING OF GEOENGINEERING POLICIES HAS NO IMPACT ON CARBON TAXES





Our third study replicates the crowding out effect from Hagmann et al. (2019), in which support for carbon taxes declines after participants view a nudge towards green energy. There was no corresponding crowding in effect after viewing a geoengineering policy.



dyagnaraman@cmu.edu



https://dhwaniy.github.io



#### References

Burns, L., Keith, D., Irvine, P., Horton, J., & Belei, B. (2018). Solar geoengineering. Boston Tech Hub Faculty Working Group [accessed January 21 2020] https://www.belfercenter.org/sites/default/files/files/publication/FWG% 20Fall, 202018.

Cherry, T. L., Kallbekken, S., Kroll, S., & McEvoy, D. M. (2021). Does solar geoengineering crowd out climate change mitigation efforts? Evidence from a stated preference referendum on a carbon tax. Climatic Change, 165, 1-8.

Cherry, T. L., Kroll, S., & McEvoy, D. M. (2023). Climate cooperation with risky solar geoengineering. Climatic Change, 176(10), 138.

Hagmann, D., Ho, E. H., & Loewenstein, G. (2019). Nudging out support for a carbon tax. Nature Climate Change, 9(6), 484-489.